

CLAIMS

1. An initiator comprising as constitutive components:
a pair of electrodes disposed with an insulator disposed therebetween;
a bridge wire connected between the pair of electrodes and adapted to generate heat when energized;
an explosive which detonates in response to heat generation of the bridge wire; and
a casing that hermetically accommodates the bridge wire and the explosive, wherein at least one selected component comprises means for enhancing its resistance to pressure generated through detonation of the explosive when the component receives the thus-generated pressure.
2. An initiator according to claim 1, wherein the resistance enhancing means is provided on the insulator.
3. An initiator according to claim 1, wherein the resistance enhancing means is provided on any of the electrodes.
4. An initiator comprising as constitutive components:
a pair of electrodes disposed with an insulator disposed therebetween;
a bridge wire connected between the pair of electrodes and adapted to generate heat when energized;
an explosive which detonates in response to heat generation of the bridge wire; and

a casing that hermetically accommodates the bridge wire and the explosive, wherein at least one selected component comprises means for preventing removal of the component, which removal would otherwise occur by means of pressure generated through detonation of the explosive and applied to the component.

5. An initiator according to claim 4, wherein the removal prevention means is provided on the insulator.

6. An initiator according to claim 4, wherein the removal prevention means is provided on any of the electrodes.

7. An initiator comprising as constitutive components:
a pair of electrodes disposed with an insulator disposed therebetween;
a bridge wire connected between the pair of electrodes and adapted to generate heat when energized;
an explosive which detonates in response to heat generation of the bridge wire; and

a casing that hermetically accommodates the bridge wire and the explosive, wherein at least one selected component comprises means for increasing engagement force between the component and an adjacent component when the selected component receives pressure generated through detonation of the explosive.

8. An initiator according to claim 7, wherein the engagement force

increasing means is provided on the insulator.

9. An initiator according to claim 7, wherein the engagement force increasing means is provided on any of the electrodes.

10. An initiator according to any one of claims 1 to 3, wherein the resistance enhancing means assumes the form of a step provided on a selected component at the boundary between the selected component and an adjacent component, the step being formed such that the area of an explosive-side pressure reception surface of the selected component is greater than that of a counter-explosive-side pressure reception surface of the selected component.

11. An initiator according to any one of claims 4 to 6, wherein the removal prevention means assumes the form of a step provided on a selected component at the boundary between the selected component and an adjacent component, the step being formed such that the area of an explosive-side pressure reception surface of the selected component is greater than that of a counter-explosive-side pressure reception surface of the selected component.

12. An initiator according to any one of claims 7 to 9, wherein the engagement force increasing means assumes the form of a step provided on a selected component at the boundary between the selected component and an adjacent component, the step being formed such that the area of an explosive-side pressure reception surface of the selected component is

greater than that of a counter-explosive-side pressure reception surface of the selected component.

13. An initiator according to any one of claims 1 to 3, wherein the resistance enhancing means assumes the form of a taper surface formed on a selected component at the boundary between the selected component and an adjacent component, the taper surface being formed such that a cross section of the selected component decreases with increasing distance from the explosive.

14. An initiator according to any one of claims 4 to 6, wherein the removal prevention means assumes the form of a taper surface formed on a selected component at the boundary between the selected component and an adjacent component, the taper surface being formed such that a cross section of the selected component decreases with increasing distance from the explosive.

15. An initiator according to any one of claims 7 to 9, wherein the engagement force increasing means assumes the form of a taper surface formed on a selected component at the boundary between the selected component and an adjacent component, the taper surface being formed such that a cross section of the selected component decreases with increasing distance from the explosive.

16. An initiator according to any one of claims 1 to 3, wherein the resistance enhancing means assumes the form of a knurled portion

provided on a selected component at the boundary between the selected component and an adjacent component.

17. An initiator according to any one of claims 4 to 6, wherein the removal prevention means assumes the form of a knurled portion provided on a selected component at the boundary between the selected component and an adjacent component.

18. An initiator according to any one of claims 7 to 9, wherein the engagement force increasing means assumes the form of a knurled portion provided on a selected component at the boundary between the selected component and an adjacent component.

19. An initiator according to any one of claims 13 to 15, wherein the taper surface is provided partially on the selected component.

20. An initiator according to any one of claims 16 to 18, wherein the knurled portion is provided partially on the selected component.

21. An initiator according to any one of claims 1 to 3, wherein the resistance enhancing means assumes the form of an engaging protrusion provided on a selected component at the boundary between the selected component and an adjacent component.

22. An initiator according to any one of claims 4 to 6, wherein the removal prevention means assumes the form of an engaging protrusion

provided on a selected component at the boundary between the selected component and an adjacent component.

23. An initiator according to any one of claims 7 to 9, wherein the engagement force increasing means assumes the form of an engaging protrusion provided on a selected component at the boundary between the selected component and an adjacent component.

24. An initiator according to any one of claims 1 to 3, wherein the resistance enhancing means assumes the form of surface treatment performed on a selected component so as to increase friction force between the selected component and an adjacent component.

25. An initiator according to any one of claims 4 to 6, wherein the removal prevention means assumes the form of surface treatment performed on a selected component so as to increase friction force between the selected component and an adjacent component.

26. An initiator according to any one of claims 7 to 9, wherein the engagement force increasing means assumes the form of surface treatment performed on a selected component so as to increase friction force between the selected component and an adjacent component.

27. An initiator comprising as constitutive components:
a pair of electrodes disposed with an insulator disposed therebetween;

a bridge wire connected between the pair of electrodes and adapted to generate heat when energized;

an explosive which detonates in response to heat generation of the bridge wire; and

a casing that hermetically accommodates the bridge wire and the explosive, wherein at least one selected component comprises a non-right-cylindrical portion at the boundary between the selected component and an adjacent component, the non-right-cylindrical portion receiving reaction force from the adjacent component when the selected component receives pressure generated through detonation of the explosive.

28. An initiator according to claim 27, wherein the non-right-cylindrical portion assumes the form of a step which is formed such that the area of an explosive-side pressure reception surface of the selected component is greater than that of a counter-explosive-side pressure reception surface of the selected component.

29. An initiator according to claim 27, wherein the non-right-cylindrical portion assumes the form of a taper surface which is formed such that a cross section of the selected component decreases with increasing distance from the explosive.

30. An initiator according to claim 27, wherein the non-right-cylindrical portion is provided on the entirety of the boundary between the selected component and the adjacent component.

31. An initiator according to claim 27, wherein at least one of the electrodes is formed of a lead pin, which is coaxially attached to a conductive header via the insulator, the conductive header being jointed with the other electrode and the casing.

32. An initiator according to claim 31, wherein the selected component having the non-right-cylindrical portion is the insulator, and the adjacent component is the conductive header.

33. An initiator according to claim 31, wherein the selected component having the non-right-cylindrical portion is the lead pin, and the adjacent component is the insulator.